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Abstract

Radically different programs must be designed tc prcduce the kind cf prcfessicnal teachers needed for the 1980's. Appropriate programs must be developed fcr the differentiated roles: diagnostician of pupil needs and learning prcblems; developer, applier, and evaluatcr of learning strategies; instructicnal leader of staff groups; specialist in the wise use of instructional technolcgies, in curricula, in evaluaticn techniques, and in labcratcry phases cf teacher education. Preservice and inservice teacher educatich must be joined, lengthened, and made truly functicnal; the all-college approach implemented; prcgrams individualized; mcre attention given to the affective dcmain. Such new approaches as the use of interactich analysis, micrcteaching, critical incident films, simulatich procedures, and such technolcgical devices as the portable videotape reccrder, clcsed-circuit TV, multimedia study carrels, and computer-assisted instructich must be develcped fcr the entire sequence and professicnally adequate designs made for professicnal labcratcry experiences. All types cf new organizaticnal patterns and relaticnships between schools, and computer-assisted instructich must be develcped tc their fullest pctential. Comprehensive ratichale must be developed fcr the entire sequence and professicnally adequate designs made fcr professional labcratory experiences. All types cf new organizaticnal patterns and relaticnships between schools, colleges, and state agencies must be explored fcr ccoperatich cn programs and standards. Knowledge and research frcm the social and behavicral sciences must alsc be brought tc bear cn the prcblems of teacher educatich. (JS)

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CHALLENGES AND NEEDED DEVELOPMENTS IN TEACHER EDUCATION

L. O. Andrews

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Monograph VII

Howard E. Bosley, Director

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Chapter VIII

Challenges and Needed Developments in Teacher Education*

Teacher education has come under severe attack from many quarters in recent years. For a long time teacher educators of experience, when pushed to make an honest confidential analysis, have had to admit that programs for the preparation of teachers have not generally been very effective. But during the 1960's fast paced changes in the teaching profession have sharply accentuated some of those limitations and, at the same time, have pushed new demands upon the whole process of teacher education—preservice as well as inservice.

Three of these limitations will serve to illustrate growing areas of pressures and needs. Newly certificated teachers frequently find themselves unable to meet the challenging tasks and demands to which they are asked to respond in all types of present-day school communities. Special problems of providing adequate education for the urban and rural poor, for minority groups, and for the various classifications of atypical children have tended to focus on a need for some specialized preparation for teachers—specialization beyond traditional subject matter and grade level areas. Moreover, the whole fabric of school organization has been shaken by the demands of militant teacher groups for full professional status and thus for authority to make those decisions which professionals are accustomed to make about their roles and duties. By contrast, the teacher has generally been low man on the totem pole, with administrators, supervisors, and specialists directing their activities and evaluating their service.

To put it very bluntly, teacher education is at the crossroads. On the one hand, able, dedicated persons—in fact thousands of them—have labored diligently to improve their efforts and the effectiveness of their curricula and instruction. With no discredit to these persons, this effort has not been adequate for the task in the recent past and will be totally inadequate for the demands of the next decade or two. Persistent problems have been

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recognized by many, but effective solutions have not been discovered for a variety of reasons, some of which will be reviewed briefly. The net result is that members of the teaching profession must face up to the crucial fact that all previous efforts have not placed demonstrably competent teachers in every classroom, professional teachers whose work can be recognized by all—administrators, boards of education, parents and colleagues—as superior to that of virtually all nonprofessionally prepared persons. This is in sharp contrast to the condition which exists in most other professions, to whose membership the public often accords much higher status and remuneration.

LIMITATIONS OF TEACHER EDUCATION TODAY

No comprehensive *theoretical base* exists for teacher education in general, or for the laboratory phases of teacher preparation, as an example of one of the most severely limited areas from this standpoint.

Unfortunately, the demands for new teachers are so great that some kind of teacher education must go on continuously; therefore, it is impossible to wait for the research and the scholarship necessary to develop a competent theoretical base. Frequently it is recognized that the profession knows much more about how to educate teachers than is actually practiced. This fact reinforces the idea that the best minds should develop the best possible *rationale* for teacher education from the knowledge and experience already available. Recent financing of several institutions to develop model programs is a step in this direction; but there is still a danger that these projections will be such elaborate models that most institutions will not be able to implement them. This concern supports the proposition that a comprehensive rationale is indeed needed as a guide rather than just as a model.

Both a theoretical base and a comprehensive rationale for a professional curriculum are most likely to result from the work of lifetime scholars in the broad field in question. Unfortunately, the number of such scholars in the field of teacher education, *per se,* has been only a mere handful. The profession of teaching has been very slow to recognize the need for outstanding *scholarship* in the total curriculum of teacher education. Again, some effort has gone into remedying this gap during recent years, but comprehensive scholarship is hardly acquired instantly in the fashion in which so many want—yes, even demand—instant professional status, instant prestige, instant salary adjustments. True scholarship in teacher education will require broad understanding of the related behavioral sciences, of research in all phases of education, of the needs of society, and of the changing demands upon the practitioner of teaching. The task then becomes one of synthesizing all this, working along with those who design and operate teacher education curricula, both preservice and inservice.

Faculties of teacher education institutions long ago learned through bitter experience that they must be realists—that is, they must trim their programs and activities to the *financial resources* available. Genuine improvement becomes very slow when faculty members can honestly and glibly say, "We would like to do such and such, but there isn't any money in the budget for that." In the next few years, the outlook for any vast expansion in the proportion of higher education budgets allocated to teacher education does not appear very bright. Improvements may come much more quickly and frequently from a drastic redeployment of financial resources than from any massive infusion of new money into this field.

Perhaps the single most significant factor in the lack of sufficient resources for teacher education is the historically devastating pattern of a *brief average term of service of certificated teachers.* The number of newly prepared degree-holding certificated teachers produced annually is now moving up toward a quarter million. But a significant percentage, sometimes as much as 20 to 30%, do not begin teaching upon graduation; over a third of the total are out of teaching by the end of their third year, and over one half by the end of the fifth year. The net result is that the average length of service in teaching is still around 9 to 11 years in most states, which is a sharp contrast to the situation in the more prestigious professions. Up to this point very little serious attention has been given to this teacher drop-out problem—to the approach of making teacher education a thoroughly professional program in its own right. By reducing drastically the number of insurance seekers and those with temporary interests, teacher education institutions might redeploy their resources to support a more adequate professional curriculum.

Traditions in higher education are real and persistent phenomena. One tradition which has not been questioned by large segments of the teaching profession is the stranglehold on professional preparation programs which results from a near universal American practice of boxing teacher education into the bachelor's degree program. A number of other countries have developed programs in the area of teacher education which have broken completely out of this pattern, and the more prestigious professions in America either have done so directly with post-degree professional programs or have made true professional status available chiefly to those with graduate degrees. Many may not yet agree, but this writer would predict that the persistent problems of teacher education will not really be solved until and unless professional teacher education has broken out of the stranglehold of the bachelor's degree curriculum. This change is not likely to occur quickly, but as truly professional patterns of preparation are designed, it will become increasingly obvious that the four-year bachelor's degree program simply does not provide enough time to complete this preparation to satisfactory levels of professional competence.

The decade of the 1960's has witnessed the introduction of a great number of so-called *innovations* and modifications in teacher education. Unfortunately, many show little difference from practices explored in the 1930's as not to be genuine innovations at all. Others have been promoted as if they were *panaceas* that would solve all the problems. A reasoned approach to the total situation forces one to recognize that there are no single panaceas and answers—the improvement of teacher education just isn't that simple.

In summary, it must be emphasized that the end of the 1960's provides a vastly different picture from that which faced the teacher educator at the beginning of the decade. The true innovations and developments, the research into teaching, accelerated developments in the behavioral sciences, the expanding instructional technology, as well as the sharply increased challenges, have combined to give the scholar and the practitioner in teacher education more professional resources to work with and a more sharply focused image of the needs and demands upon professional preparation for teaching. The real caution that must be sounded is that the demands are so great that time is of the essence. The demand is now! It behooves all segments of the teaching profession to get a clear perception of the needs of the future (such as the kind of professional teacher needed for the 1980's) and begin at once to design radically different programs to provide truly competent teachers throughout our vast educational system.

TEACHERS FOR THE 1980's

Increasing demands within the schools and evolving trends begin to provide glimpses of many of the tasks to be expected of teachers in the 1980's, an era which once seemed so far away but now seems to be approaching with frightening speed. For basic documentation, just one additional area of general concern will be added to those of the previous section. The concept of differentiated staff with a hierarchical set of professional levels taken together with several types of paraprofessionals has already become common in several professions as well as in business and industry. A similar movement is progressing rapidly in teaching to the extent that general acceptance of this development becomes a certainty rather than an area of prophecy.

The evolution of a concept like differentiated staff forces a profession to provide practical role definitions for the various levels and, at the same time, to develop appropriate but different preparation programs for the various roles. The dimensions of such a task almost stagger the imagination in a professional area as large as teaching. In the discussion which follows, the characteristics of the teacher for the 1980's will be those of the highest level professional teacher, whose status of prestige and remuneration

hopefully would put such persons on a par with the highest levels in many of the more distinguished professions.

In studying the following paragraphs, the reader is asked to keep in mind the need for a teacher education pattern that will produce teachers possessing a very high level of effectiveness. An easy way to say it, but a very difficult standard to attain, would be that each teacher who reaches the highest level of certification and professional stature would have demonstrated a high level of professional competence and a reasonable level of assured self-confidence. Less than this will prevent the profession from reaching acceptable levels of prestige and compensation. Assuredly, not all teachers will achieve equal levels of competence in all of the identified areas, but it is reasonable to assume that the top professional teacher must attain competence in many areas of knowledge and skill. This teacher might be called an *instructional specialist* and a *team leader.*

Diagnostician of Pupil Needs and Learning Problems

Many young teachers of today are so concerned about discipline, group control, and direction that they almost lose sight of the individual pupil's real needs and problems. In solving the educational problems that society and the country want solved, it becomes increasingly clear that each individual must have his needs and problems identified if any teacher is actually going to help him attain realistic goals. The professional teacher must be knowledgeable in a wide range of abilities, skills, aptitudes, and interests. Clearly, no teacher can become a specialist in the treatment of the whole range of mental, physical, emotional, and social disabilities, but much basic knowledge is needed to make preliminary identifications, secure competent specialized diagnostic service, and to understand the basic rationales that are used in the treatment of the various disabilities.

Developer, Applier, and Evaluator of Learning Strategies

Based upon the competencies described above, the professional would then need to select and design appropriate learning strategies, assist the learners in adapting these strategies to their own needs, and evaluate the resultant effectiveness of the strategies used. This skill could not be brought to a high level of effectiveness without a very broad understanding of learning theories, research results, and extensive directed experience in this aspect of teaching.

Instructional Leader

For many years teaching has been a public profession but has been privately practiced. The teacher goes into his (or her) classroom with a group

of learners, closes the door, and becomes the king bee (or queen) over the group. Older teachers who have never worked with prospective teachers in their classrooms frequently have difficulty in directing many of the wide range of participatory experiences–especially those which do not consist of sitting and listening or of taking over the class as a student teacher. In short, teacher preparation of the past and much of the present has not prepared young people to work with other adults in teaching. Today, a wide variety of team efforts are being used and explored, and at least three different levels of leadership will be required of the professional of the future. These are: (1) directing the work of assistant teachers and paraprofessionals, (2) serving as a member of an instructional team, and (3) serving as the leader of a teaching team composed of several different levels of differentiated staff. A new kind of sophistication in interpersonal relations will be required of these new professionals.

Specialist in the Wise Use of Instructional Technologies

For many years teachers have been urged to make better use of a variety of types of the new media, while in more recent years schools have provided much more such equipment for teachers. Unfortunately, the results have often proved very disappointing. The problem is not just one of teaching faculties to use new devices and getting them to do so, but a much more sophisticated level of understanding and skill–that of a complete understanding of the media and their virtues and limitations, plus acquiring a comprehensive understanding of appropriate learning theories. In the popular parlance of the day, this means a comfortable familiarity with the hardware, understanding of and skill in developing the software–teaching materials and programs–as well as the ability to use the wide range of instructional technologies functionally and effectively.

Specialist in Curricula

In the past teachers have become accustomed to being handed a curriculum or a textbook and expected to follow this with some degree of systematic approach. Recently, however, more and more teachers have been involved in curriculum modification and development, but many never had an introduction to curriculum theory or preparation for developing one. The instructional specialist–team leader of the future–may very well become a leader in all of these operations, evaluating, modifying, and developing curricula. If the teachers' organizations press their demands for teachers to operate as genuine professionals, making responsible decisions governing their professional activities, then the professional teacher of necessity cannot avoid having a major role in curriculum operations.

Specialist in Evaluation Techniques

Most present-day beginning teachers have had a very limited introduction to the vast array of evaluation techniques. If a major part of the professional teacher's time is to be spent in developing, applying, and judging the effectiveness of instructional strategies, then clearly the teacher must be able to decide which evaluation techniques to use and be able to use them effectively. To do this implies being very knowledgeable in both formal and informal procedures, objective and subjective approaches, as well as in reporting the results of evaluation to pupils, parents, the public, and the profession. The newer concepts of behavioral objectives for teachers, as well as such objectives for pupils, is another aspect of modern theories of teaching, and new teachers need to understand this approach and have had experience in using it.

Specialist in the Laboratory Phases of Teacher Education

There is indeed one certain trend in teacher education which shows no sign of reversing—the public schools are being steadily called upon to assume an increasing amount of responsibility for the laboratory phases of teacher education. Here and there throughout the country major programs are in progress to raise the level of teachers' understanding and skill in teacher education activities. As this process proceeds and teachers become more sophisticated in teacher education activities, the roles of the student teaching "team" will change. As a result, classroom teachers will assume more and more responsibility for directing the laboratory experiences of prospective teachers. As one result the role of the college supervisor will shift to working less directly with the student teacher and more through the supervising or sponsor teacher. Some school superintendents are beginning to believe that one of the best ways to improve their school system is to develop an outstanding student teaching program or, more broadly, an excellent teacher education laboratory program. An essential element in a comprehensive differentiation of staff is to enhance the role of the practitioner who is charged with directing the clinical or laboratory phase of the preparation program. Achieving demonstrated skill and success in this area is one more way to provide a special category of distinction to which professional teachers may aspire.

NEW DEMANDS UPON THE TEACHER EDUCATION CURRICULUM

Teacher education activities are in a mild state of ferment. Many new emphases are being studied, various approaches are being explored, several specific activities are probably being oversold; but withal desirable directions for increased effort and improvement are beginning to be visible through the fog of tradition and uncertainty. A number of important directions,

guidelines, and major concerns are developed briefly in the following section. The faculty of any given college should recognize at once that probably no institution will consider all of these areas. But, on the other hand, college faculty members who consider themselves true teacher educators are indeed responsible for study and leadership in these and related directions.

To provide able, professional career teachers both for the immediate future and the long pull, *preservice and inservice teacher education* should be joined, lengthened and made truly functional. Within this totality of professional effort should be included professional selection, certification, orientation, and induction into the role of the practitioner and the maintenance of high standards of professional performance. Such a total effort will require the cooperation of all members of all segments of the profession of teaching.

For more than a decade the National Commission on Teacher Education and Professional Standards as well as the National Council for the Accreditation of Teacher Education have emphasized the *all-college approach to teacher education.* In various institutions progress has been made. However, it is still painfully obvious that on most campuses there are vast resources that have not yet been marshalled into this total professional effort which is so extremely important to the national welfare. It is time to deemphasize talk and push for action and cooperation.

One of the less publicized but more serious criticisms of teacher education has been its failure to "practice what it preached" in the area of *individualized instruction.* College students have often been painfully aware that their professors tried to teach them how to individualize their efforts in teaching children, while at the same time forcing prospective teachers through a stultifying lockstep program that admitted little or no variation for either individual differences, needs, or previous background. The level of readiness for professional learning varies amazingly, while the background of professional and preprofessional experiences is extremely great. There may actually be no other approach which would improve teacher education as much as to have competent, empathetic professor-counsellors work with individual students throughout their teacher preparation years, diagnose their needs, adapt their experiences to their needs, and modify the curriculum to suit their rates of development.

A generation ago there was much criticism of teacher education because so many of the experiences of students were obtained in the so-called "hot-house" atypical laboratory school. Even today, when most experiences are provided in regular public schools, many students still find that the course content does not seem relevant to what they think will be their practical, real needs as teachers. There surely are no single or simple

answers as to how to *make professional courses functional* for prospective teachers, but there is not the slightest doubt that ways must be found to succeed in this effort for the vast majority of prospective teachers. If the profession is to be provided with a constant infusion of new members who understand professional content and who are competent in using that knowledge as a basis for steadily increasing their professional skill, new patterns of functional courses will be a necessity.

For years many teacher educators believed they should emphasize only cognitive content. Persons who are thoroughly familiar with the very demanding tasks of present-day teachers are convinced that both the *cognitive* and the *affective* domains of *knowledge* belong in the teacher education curriculum. However, to do this effectively raises a number of urgent unsolved problems. Most people are acutely aware of the explosion of knowledge in the physical sciences and their applications. But many have not become so aware of a similar (although somewhat slower and less well-developed) trend in the social and behavioral sciences upon which the profession of teaching depends for much of its basic content. No longer is it adequate to teach college students to soak up facts as a blotter, for two most significant reasons. First, no one can ever hope to learn all that it would be desirable to know, and, secondly, there is always the problem of how one keeps up on new knowledge as it becomes available. Old solutions must give way to new approaches. Professors now must shift their emphasis from demanding memorization of content to teaching the structure of the discipline, the key concepts, the major issues, the vocabulary, the organization of the field including how to find what one wants to know and how to use it when it is found, and finally—and perhaps most important—how to keep up to date in a given field.

A somewhat similar but perhaps even more difficult challenge arises in the *affective* domain. Much is heard and written these day about *sensitivity training.* But some of the earliest and best-known methods are open to serious question when used as a routine approach with college upper classmen. It is one thing for experienced business and professional people to apply to enter group therapy sessions, but quite another thing to require the same participation as a part of a college curriculum. Other types of sensitivity training are being designed and explored so that hopefully some appropriate and effective processes may be developed. But few who know conditions in the vast variety of urban and rural populations would question the need for some adequate type of preparation for young people who will be called upon to work under the pressures and conditions which exist in schools today.

NEW AND EVOLVING PROCEDURES IN TEACHER EDUCATION

Seldom has a curriculum worker in any field, and never before in

teacher education, had available for his use so many *new and refined procedures* plus devices and processes from the wide range of the *new media* or instructional technology. Because the possible adaptations are almost limitless, only a few of the major groupings will be mentioned here.

Recent research in teaching has resulted in a broad array of various types of the so-called *interaction analysis*. Unfortunately, most of those that are well known have come from research methodology and are limited to the analysis of verbal interaction alone. The need is for refined systems that are more precisely adapted to the requirements of learning situations.

Micro-teaching is a refinement of a common, long-used methods course device of self-teaching and the use of small groups for instructional purposes in the laboratory schools. In its present form it is a very potent device for developing the fundamental, behavioral skills of teaching. At the other extreme the *critical incident film* or recording has been shown to be very effective in stimulating students under an able instructor to analyze principles of educational psychology and methodology and, therefore, to examine bases for decision making in teaching. In between these extremes is a developing technology which can be defined quite precisely as *simulation* procedures. Apparently, the most likely development for this approach is to provide comprehensive data on a group of children and the individuals within the group through the multimedia. Then, specific realistic situations are presented to which the prospective teacher is expected to respond by utilizing both types of understanding from the two previously discussed approaches–bases for decision making from critical incident films, and fundamental teaching behavioral skills as developed through micro-teaching. The multimedia or "hardware" is currently available; the corresponding "software" programs are still mostly in the developing stages, but should steadily become both more numerous and more useful.

The *portable videotape recorder* is perhaps the most dramatic of the newer devices now available to teacher educators, but the range of other types is very great–*open- and closed-circuit television, single concept loop films, the overhead projector, dial access,* a much wider range of uses for *audiotape recorders, the multimedia study carrel,* not to mention the possibility of *computer-assisted instruction in teacher education.* Much exploration and research is needed to bring these approaches to their maximum potential, but the videotape recorder seems especially significant in that it provides a "mirror image" for the prospective teacher and the capacity for the instructor to record classroom episodes and other types of situations as laboratory specimens for more effective professional study in college classrooms. Naturally, finance is a problem, but judging by other recent developments, teacher educators should be very diligent to prevent a recurrence of the common phenomenon of getting too much equipment

before the teachers are stimulated and prepared to use it, only to discover that the equipment remains unused.

Previous paragraphs in this section have addressed themselves chiefly to various aspects of college instruction. From this point on, however, the emphasis will be on more comprehensive suggestions or guidelines for the improvement of the total teacher education process with particular stress on those ways in which cooperative effort can bring about improvement. However, in this chapter no detailed treatment will be included on the strictly inservice aspects of teacher education, even though, to be optimally effective, programs must be designed with direct concern for the comprehensive whole of both the preservice and inservice aspects.

The entire range of professional laboratory experiences has been severely handicapped by the lack of a comprehensive theoretical base. But beyond that a most serious limitation has been the absence in most cases of a professionally adequate *design.* Improved experiences can result from a joint effort of schools and colleges in the design phase. Earlier, the need for individualizing experiences was stressed; what is needed are not new rigid designs but rather many new general designs with careful attention to the needs and problems of prospective teachers and how the designs can contribute to satisfying their needs and solving their problems. With a wide range of professionally and expertly developed experiences from which to choose, individual needs can be served far more adequately than with the now so common lock-step progression utilizing only a very small number of basic designs.

As an aside at this point, it may be appropriate to indicate that many of the new media and refined procedures may in the long pull prove to be more effective and more commonly used at the inservice than at the preservice level. For example, micro-teaching, critical incident films, simulation, mini-courses, the multimedia study carrel, the mirror image of the videotape recorder, the use of models and even of recorded classroom episodes all would provide new and improved ways for the experienced teacher to objectify teaching processes and problems away from himself. This equipment gives a ready approach to the teacher who wants to study ways to improve any one of a myriad of specific teaching behaviors and procedures.

The number of college-controlled laboratory schools is rapidly declining. As a result, student teaching and internship types of experiences will be conducted almost exclusively in public schools from now on. But a newly evolving arrangement gives promise of much greater dividends in the long run. In New York City it is called the "campus school" movement, but everywhere the process involves *an equal partnership of a school faculty and a group of college faculty* evolving cooperatively some joint professional

activity which may relate specifically to teacher education or to the improvement of teaching-learning in the school, or both. If properly utilized, this cooperative approach has greater potential for teacher education than the college-controlled laboratory schools ever had.

In the operational phases of student teaching and all related experiences, another approach to equal partnership has now been developing for some years, and new cooperative structures have evolved. Usually, the bases for such activities are relatively small areas. They are often called *school-college teacher education councils* and may cover one urban area, a region around a college, or a larger area up to the size of a small state, including from one to many school systems and from one to a dozen or more colleges. Councils such as these provide a channel for developing and improving policies, handling problems of operations, reducing conflicts and establishing rights for all agencies, even to handling financial matters, exercising leadership in inservice education for members of the "student teaching team" and various kinds of professional relationships and opportunities for professional development.

In a considerable number of widely scattered places throughout the country, *new organizational patterns and relationships* are being designed, explored, and evaluated. The fact that the persistent problems of student teaching have not generally been solved anywhere in the country makes these efforts all the more important and worth watching. No one of the new patterns has yet appeared to provide a relatively certain solution to several of these problem areas, but some of the newly conceptualized centers and patterns for supervision using the so-called clinical professor concept and team supervision appear to hold much promise.

In each of the two previous paragraphs the patterns reported include some teacher education projects which are clear examples of *a new kind of specialization in teacher education*—such as the preparation of teachers for inner city or ghetto schools. As yet, it does not appear certain whether the colleges or the schools will finally have to assume the major responsibility for the preparation of specialist teachers. Up to this point some cooperative effort seems an essential part of any program, and much joint exploration ought to be carried on in many places.

For years teachers have looked longingly at some of the older and more prestigious professions and specifically at their ability to control their own preparation programs and licensure. One means to influence any movement in this direction is the development and enforcement of *standards for preparation.* Because of numbers and the complexity of both a public profession and the wide range of institutions preparing teachers, the task is most complicated in the field of teaching. Progress is being made, even

though slowly and with a very long way to go. Both at the national level and in several states, efforts are under way to improve standards and especially those that apply to teacher preparation programs. Teacher educators should keep informed of these efforts and recognize the place that standards can have in professional improvement. Standards also have their limitations, for minimum standards may become maximum standards tending to pull all programs down to a level of mediocrity. The need is for some kind of minimum requirements to set a level, "below which thou shalt not," but at the same time to find well-stated rationales that will serve as guides to new and improved programs without the stultifying effect of implying the necessity for uniformity which tends to restrict new developments.

During this decade much has been said and written about the need for *state leadership* in teacher education and especially *in the laboratory phases of teacher education.* Problems such as large numbers, competition for student assignments, lack of finance, inadequate numbers of well-prepared supervising-sponsor teachers, more frequent appearance of arbitrary restrictions by local school systems, and examples of college domination are analyzed by many as suggesting that few solutions can be found unilaterally and that some kind of state cooperative action is necessary in resolving acute problems. The evolution of state responsibility in the area of student teaching and related experiences has been moving very slowly. Leaders in the field are pointing out that the cooperation of the schools and colleges under some sponsorship from the state department of education, together with the support of the appropriate professional organizations, should provide policies, procedures, and financial support for solving persistent problems and spearheading movements for improvement. Generally, it appears that college faculty people must assume a lead role in bringing these groups together and helping all groups to sharpen their perceptions of the problems and possible solutions.

Many of the approaches described in this section could be facilitated considerably if good research data were available. While the profession cannot stop everything and wait for results of research, college faculties should recognize the need for research and marshall the support of all involved agencies in securing adequate resources. Here again, the key to quality is in the design of the research. Abundant evidence is available to point up the difficulty of designing significant research in teacher education. But until better research projects are designed and completed, many aspects of teacher education will be structured largely on hunches or guesses.

Very closely related to the above paragraph is the whole range of knowledge—*important concepts*, if you will—needed to support improvements in both the content and procedures of teacher education. Again, unfortunately, not enough teacher educators are scholars in the

related disciplines of the social and behavioral sciences, and, significantly, it is these disciplines which will provide many teacher educators with the tools and the expertise necessary to improve the total process of professional preparation. In addition, there is considerable reason to believe that some of the key techniques for breakthrough research may already have been developed in these related disciplines.

This overview of challenges and needed developments in teacher education was designed to serve as an introduction to a series of chapters presenting illustrations of important developments in teacher education. Indeed, the content of these chapters presents topics that are closely related to some of the areas of interest which have been discussed in this chapter.

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